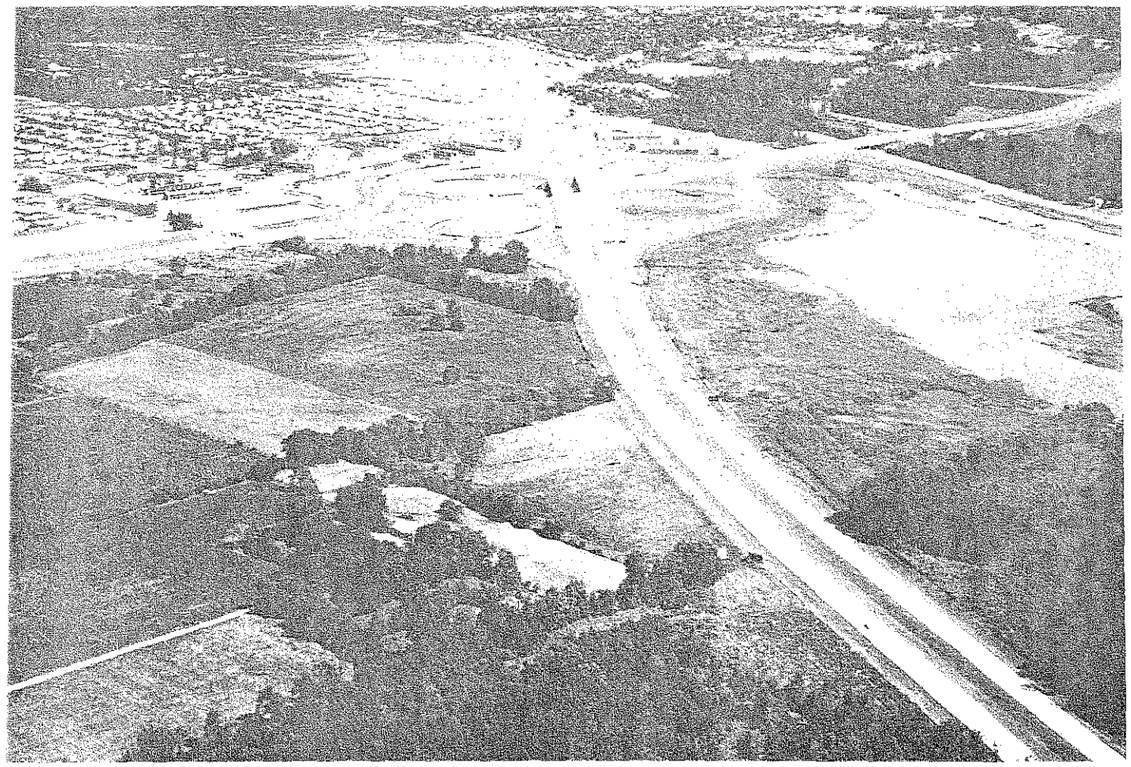
SOIL SURVEY OF

Marion County, Indiana



United States Department of Agriculture
Soil Conservation Service
In cooperation with
Purdue University Agricultural Experiment Station

Contents

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pastured. Capability unit IIw-2; woodland suitability subclass 3w.

CsB2—Crosby-Miami silt loams, 2 to 4 percent slopes, eroded. This gently sloping mapping unit is on broad, slightly undulating plains; on low knolls of broad, nearly level plains; and at the heads of drainageways. Areas range from 2 to 30 acres in size. Most are irregularly shaped or round. Some are long or fan shaped.

This mapping unit is about 60 percent a somewhat poorly drained Crosby soil, 30 percent a well drained Miami soil, and 10 percent other soils. In areas where slopes are uniform, the Crosby soil is on the lower and upper parts of slopes and the Miami soil is at midslope. In hummocky areas, the Crosby soil is on the lower knolls and ridges and the lower parts of the higher knolls and ridges and the Miami soil is on the upper parts of the higher knolls and ridges. The Crosby soil has a profile similar to the one described as representative of the series, but the surface layer is thinner and contains some clay loam.

Included with these soils in mapping are small areas of nearly level Crosby soils, small areas of very poorly drained Brookston soils in slight depressions, small areas of Crosby-Miami silt loams that have been in woodland or in permanent pasture for many years and are not eroded, and small areas of moderately well drained soils that are somewhat similar to the Miami soil.

Runoff is medium. Moderate erosion is the main limitation of these soils. Wetness is also a limitation of the Crosby soil. Because of wetness and slow permeability, the Crosby soil has severe limitations for most nonfarm uses. The Miami soil has moderate limitations for most nonfarm uses. If erosion is controlled and drainage is adequate, both soils are well suited to corn, soybeans, small grain, grasses, and legumes. Most areas are cultivated. The few wooded areas support fair stands of hardwoods. Capability unit IIe-12; woodland suitability subclass 3w.

Eel Series

The Eel series consists of deep, nearly level, moderately well drained soils on the flood plains along the White River and the larger creeks. These soils formed in loamy alluvium. The native vegetation is hardwoods.

In a representative profile, the surface layer is dark grayish brown silt loam 9 inches thick. The underlying material to a depth of 60 inches is brown silt loam in the upper 6 inches; mottled brown loam in the next 10 inches; and mottled grayish brown, stratified silt loam and loam below a depth of 25 inches.

Permeability is moderate. Available water capacity is high. Organic-matter content of the surface layer is moderate. The seasonal high water table is 3 to 6 feet below the surface during some part of the year.

Eel soils are well suited to farming, but crops are subject to damage from flooding. Because of flooding, these soils have severe limitations for most nonfarm uses.

Representative profile of Eel silt loam in a cultivated field 2,400 feet east and 50 feet south of the northwest corner of sec. 16, T. 14 N., R. 3 E.

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam; moderate medium granular structure; friable; common fine roots; neutral; abrupt smooth boundary.

C1—9 to 15 inches; brown (10YR 5/3) silt loam; weak medium subangular blocky structure; friable; common fine roots; continuous prominent dark grayish brown (10YR 4/2) organic coatings on faces of peds; neutral; clear wavy boundary.

C2—15 to 25 inches; brown (10YR 5/3) loam; common faint fine light brownish gray (10YR 6/2) mottles; weak medium subangular blocky structure; friable; few fine roots; common fine dark yellowish brown (10YR 3/4) iron and manganese oxide concretions; neutral; clear wavy boundary.

C3—25 to 60 inches; grayish brown (10YR 5/2) stratified silt loam and loam; common medium distinct brown (10YR 5/3) and yellowish brown (10YR 5/8) mottles; few fine yellowish brown (10YR 3/4) iron and manganese oxide concretions; slight effervescence; mildly alkaline.

Reaction throughout the profile is neutral to moderately alkaline.

The Ap horizon is dark grayish brown (10YR 4/2), brown (10YR 5/3, 4/3), or very dark grayish brown (10YR 3/2) silt loam. It has weak or moderate fine or medium granular structure.

The upper part of the C horizon is brown (10YR 5/3), pale brown (10YR 6/3), or yellowish brown (10YR 5/4) silt loam, loam, or light silty clay loam. The lower part is grayish brown (10YR 5/2) or dark grayish brown (10YR 4/2), stratified silt loam, loam, sandy loam, and some thin strata of sand.

Eel soils are in the same positions on the landscape as well drained Genesee soils. The somewhat poorly drained Shoals soils and very poorly drained Sloan soils are in depressional areas. Shoals and Sloan soils have mottles at a depth of 8 to 10 inches.

Ee—Eel silt loam. This nearly level soil is on broad flood plains along the river and on narrow flood plains along the meandering creeks. Areas range from 2 to 200 acres in size. Most are long and narrow, but some are irregularly shaped. Slopes are 0 to 2 percent. In some small areas, this soil has a silty clay loam surface layer.

Included with this soil in mapping are small areas of well drained Genesee soils and somewhat poorly drained Shoals soils. Small sandbars and sand spots are identified by spot symbols on the soil map.

Runoff is slow. Flooding is the main limitation. Because of flooding, this soil has severe limitations for most nonfarm uses. It is subject to flooding in winter and early in spring and to flooding during some growing seasons. This soil is well suited to corn, soybeans, and other crops. Most areas are cultivated. Wooded areas support poor to fair stands of hardwoods. Capability unit IIw-7; woodland suitability subclass 1o.

Fox Series

The Fox series consists of nearly level to moderately sloping, well drained soils that are moderately deep over sand and gravelly sand. These soils are on outwash plains and terraces, kames, and eskers. They formed in loamy outwash and the underlying gravelly sand and sand. The native vegetation is hardwoods.

In a representative profile, the surface layer is dark brown loam 8 inches thick. The subsoil is about 30

inches thick. The upper 10 inches is dark brown, friable loam; the next 6 inches is dark brown, firm sandy clay loam; and the lower 14 inches is dark brown, firm gravelly clay loam. The underlying material to a depth of about 60 inches is yellowish brown gravelly sand and sand.

Permeability is moderate in the solum and rapid in the underlying material. Available water capacity is moderate. Organic-matter content of the surface layer is moderate.

Fox soils are suited to all crops commonly grown in the county. They have only slight limitations for most nonfarm uses. Most gravel and sand in the county pits are in areas of Fox soils.

Representative profile of Fox loam, 0 to 2 percent slopes, in a hayfield 2,140 feet west and 1,000 feet north of the southeast corner of sec. 27, T. 15 N., R. 3 E.

Ap—0 to 8 inches; dark brown (10YR 4/3) loam; weak fine granular structure; friable; few fine roots; slightly acid; abrupt smooth boundary.

B1—8 to 18 inches; dark brown (7.5YR 4/4) loam; weak medium subangular blocky structure; friable; few fine roots; medium acid; clear smooth boundary.

B21t—18 to 24 inches; dark brown (7.5YR 4/2) sandy clay loam; moderate medium subangular blocky structure; firm; discontinuous faint thin dark brown (7.5YR 4/2) clay films on faces of peds; medium acid; gradual wavy boundary.

IIB22t—24 to 38 inches; dark brown (7.5YR 4/4) gravelly clay loam; moderate medium subangular blocky structure; firm; continuous distinct thick dark brown (7.5YR 3/2) clay films on faces of peds and on surfaces of gravel; slightly acid; abrupt irregular boundary.

IIC—38 to 60 inches; yellowish brown (10YR 5/4) gravelly sand and sand; weakly stratified; single grained; loose; strong effervescence; moderately alkaline.

The solum is typically 30 to 40 inches thick, but ranges from 24 to 40 inches.

The Ap horizon is dark brown (10YR 4/3), dark grayish brown (10YR 4/2), or brown (10YR 5/3) silt loam, loam, or fine sandy loam. It has weak or moderate fine or medium granular structure. The A2 horizon, if present, is brown (10YR 5/3) or grayish brown (10YR 5/2) silt loam, loam, or fine sandy loam. It has weak or moderate fine or medium granular or platy structure.

The B2t horizon is dark brown (7.5YR 4/2, 4/4), dark yellowish brown (10YR 4/4), or reddish brown (5YR 4/4) silty clay loam, clay loam, sandy clay loam, or gravelly clay loam. It has patchy to continuous, thin to thick clay films. The B3 horizon, if present, is dark reddish brown (5YR 3/3) or reddish brown (5YR 4/4) light clay loam, loam, gravelly loam, or gravelly sandy clay loam. It has weak or moderate medium or coarse subangular blocky structure. In places, tongues of the B2 or B3 horizon extend 1 foot to 4 feet into the C horizon. Gravel content in the lower part of the B2 horizon and in the B3 horizon ranges from less than 1 to 25 percent and increases with increasing depth.

The C horizon is yellowish brown (10YR 5/4-5/8), pale brown (10YR 6/3), or very pale brown (10YR 7/3).

Fox soils are similar in drainage to Martinsville and Ockley soils. They have a thinner solum than Ockley soils. Fox soils have more gravel in the lower part of the solum than Martinsville soils.

FoA—Fox loam, 0 to 2 percent slopes. This nearly level soil is on broad outwash plains and terraces adjacent to the bottom land along the river and creeks. Areas range from 2 to 200 acres in size. Most are irregularly shaped, but some are round or long. This soil has the profile described as representative of the series.

Included with this soil in mapping are small areas of well drained Martinsville and Ockley soils; small areas of very poorly drained Westland soils in long, very narrow, faintly defined drainageways; small areas of soils that are underlain by less than 12 inches of gravelly sand and sand over loam till; and areas of soils that have gravel and sand on the surface.

Runoff is slow. Droughtiness is the main limitation. This soil has only slight limitations for most nonfarm uses. It is suited to corn, soybeans, small grain, grasses, and legumes. Most areas are cultivated. Wooded areas support fair stands of hardwoods. Capability unit IIs-1; woodland suitability subclass 2o.

FoB2—Fox loam, 2 to 6 percent slopes, eroded. This gently sloping soil is on the side slopes of drainageways within broad outwash plains and terraces and on the tops and upper sides of kames and eskers. Slopes are short and dominantly 4 percent. Areas range from 2 to 30 acres in size. Most are irregularly shaped, but some are round or long. This soil has a profile similar to the one described as representative of the series, but the surface layer is thinner, is heavier, and incorporates more of the dark brown subsoil; scattered pebbles are on the surface; and depth to the underlying gravelly sand and sand is 30 to 36 inches. Small areas of this soil that have been wooded or pastured many years are not eroded.

Included with this soil in mapping are small areas of soils that have a moderate amount of gravel and cobbles on the surface and in the plow layer; small areas of gently sloping, well drained Martinsville and Ockley soils; and small areas of very poorly drained Westland and Rensselaer soils and somewhat poorly drained Sleeth soils in weakly defined drainageways.

Runoff is medium. Moderate erosion is the main limitation. Droughtiness is also a limitation. This soil has only slight limitations for most nonfarm uses. If erosion is adquately controlled, the soil is well suited to small grain, grasses, and legumes and is moderately well suited to corn and soybeans. Most areas are cultivated or in pasture. The few small wooded areas support poor to fair stands of hardwoods. Capability unit IIe-9; woodland suitability subclass 2o.

FxC2—Fox complex, 6 to 15 percent slopes, eroded. This moderately sloping and strongly sloping mapping unit is on side slopes of drainageways, on steep breaks, and on side slopes of hummocky kames and eskers. Areas range from 2 to 30 acres in size. Most are long, but some are round or irregularly shaped.

This mapping unit is about 30 percent Fox loam and 30 percent soils that are similar to Fox loam but are less than 24 inches deep over the underlying sand and gravel. Texture of the surface layer is dominantly loam and clay loam, but ranges from sandy loam to gravelly clay loam. Fox loam has a profile similar to the one described as representative of the series, but the surface layer is thinner, is heavier, and incorporates more of the dark brown subsoil; scattered pebbles are on the surface; and depth to the underlying gravelly sand and sand is 24 to 32 inches. In some areas are Fox soils that are severely eroded and have a surface layer of clay loam or gravelly clay loam. The similar soils have a surface layer of loam, clay loam, sandy clay loam, and gravelly clay loam. Depth to the under-

lying gravelly sand and sand ranges from 8 to 24 inches.

Included with this unit in mapping are small areas of gently sloping, steep, and very steep soils and small areas where calcareous gravelly sand and sand is exposed. Small areas of severely eroded soils and small areas of steep and very steep soils that are shallow to gravelly sand and sand are identified by spot symbols on the soil map.

Runoff is medium. Moderate erosion is the main limitation. Droughtiness is also a limitation. Because of slope, limitations for most nonfarm uses are moderate. If erosion is adequately controlled, this mapping unit is suited to all crops grown in the area. It is best suited to small grain, grasses, and legumes. Most areas are cultivated or in pasture. The few small wooded areas support poor to fair stands of hardwoods. Capability unit IIIe-9; woodland suitability subclass 2o.

Genesee Series

The Genesee series consists of deep, nearly level, well drained soils on flood plains along the White River and the larger creeks. These soils formed in loamy alluvium. The native vegetation is hardwoods.

In a representative profile, the surface layer is dark grayish brown silt loam 6 inches thick. The upper 17 inches of the underlying material is dark grayish brown, firm silt loam; the next 9 inches is brown, friable loam; and the next 2 inches is brown, heavy sandy loam. Below this to a depth of about 60 inches is brown stratified silt loam and heavy silt loam.

Permeability is moderate. Available water capacity is high. Organic-matter content of the surface layer is moderate.

Genesee soils are well suited to farming, but crops are subject to damage from flooding. Because of flooding, these soils have severe limitations for most nonfarm uses.

Representative profile of Genesee silt loam in a hayfield 1,650 feet east and 990 feet south of the northwest corner of sec. 5, T. 14 N., R. 3 E.

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam; moderate medium granular structure; friable; common fine roots; mildly alkaline; abrupt smooth boundary.

C1—6 to 23 inches; dark grayish brown (10YR 4/2) silt loam; moderate medium subangular blocky structure; firm; moderately alkaline; clear wavy boundary.

C2—23 to 32 inches; brown (10YR 4/3) loam; moderate fine subangular blocky structure; friable; moderately alkaline; abrupt smooth boundary.

C3—32 to 34 inches; brown (10YR 5/3) heavy sandy loam; weak fine granular structure; very friable; slight effervescence; moderately alkaline; abrupt smooth boundary.

C4—34 to 60 inches; brown (10YR 4/3) stratified silt loam and heavy silt loam; massive; friable; slight effervescence; moderately alkaline.

Reaction throughout the profile is neutral to moderately alkaline.

The Ap horizon is dark grayish brown (10YR 4/2), dark brown (10YR 4/3, 3/3), or brown (10YR 5/3) silt loam, loam, or fine sandy loam. An A12 horizon is present in some profiles. It has weak or moderate fine or medium granular structure.

The C horizon is dark grayish brown (10YR 4/2), brown (10YR 5/3, 4/3), or yellowish brown (10YR 5/4), stratified silt loam, heavy silt loam, loam, sandy loam, loamy sand, sand, or gravelly sand.

The pH range in most profiles is higher than is defined as the range for the series, but this difference does not alter the use or behavior of the soils. In some areas, these soils lack carbonates in some part of the profile, but are within the defined range for the series.

Genesee soils are similar to Fox, Martinsville, and Ockley soils. They are less acid and have weaker structure than those soils.

Ge—Genesee silt loam. This nearly level soil is on broad flood plains along the river and the larger creeks and on narrow flood plains along meandering creeks. Areas range from 2 to more than 350 acres in size. Most are long and broad, but some are long and narrow or irregularly shaped. Slopes are 0 to 2 percent. In some small areas this soil has a loam or fine sandy loam surface layer, and in some areas it lacks carbonates in all parts of the profile.

Included with this soil in mapping are small areas of moderately well drained Eel soils, somewhat poorly drained Shoals soils, and well drained Fox soils; small areas of well drained alluvial soils that are less than 24 inches deep over thick strata of fine sand and loamy sand or that are sandier throughout the profile; and small sandbars and sand spots, both of which are indicated by spot symbols on the soil map.

Runoff is slow. Flooding is the main limitation of this soil. Because of flooding, limitations for most nonfarm uses are severe. The soil is subject to flooding in winter and early in spring and to flooding of short duration during some growing seasons. It is well suited to corn, soybeans, and other crops. Most areas are cultivated. Wooded areas support poor to fair stands of hardwoods. Capability unit IIw-7; woodland suitability subclass 1o.

Hennepin Series

The Hennepin series consists of deep, steep and very steep, well drained soils on side slopes and escarpments along creeks and drainageways of the till plains. These soils formed in calcareous glacial till. The native vegetation is hardwoods.

In a representative profile, the surface layer is dark grayish brown loam 3 inches thick. The subsoil is yellowish brown, friable loam about 11 inches thick. The underlying material to a depth of about 60 inches is brown loam.

Permeability is moderate. Available water capacity is high. Organic-matter content of the surface layer is moderate.

Hennepin soils are best suited to trees. Because of steepness of slope, these soils have severe limitations for most nonfarm uses.

Representative profile of Hennepin loam, 25 to 50 percent slopes, in a wooded area 490 feet west and 60 feet south of the northeast corner of sec. 9, T. 16 N., R. 2 E.

A1—0 to 3 inches; dark grayish brown (10YR 4/2) loam; weak fine granular structure; friable; many fine and coarse roots; neutral; abrupt wavy boundary.

B2—3 to 14 inches; yellowish brown (10YR 5/4) loam; weak medium granular structure; friable; many fine

by surface ditches. Some areas of Brookston soils in depressions and drainageways are ponded for brief periods by runoff from adjacent higher lying areas. Construction and engineering work should be based largely on the properties and qualities of the Brookston soils. Because of wetness, the Brookston soils have severe limitations for most nonfarm uses. If excess water is removed, they are well suited to lawns, vegetable and flower gardens, and water-tolerant shrubs and trees. Not assigned to a capability unit or woodland suitability subclass.

Uc—Urban land-Crosby complex. This nearly level mapping unit is on smooth upland flats. Slopes are 0 to 2 percent. Areas range from 10 to 1,000 acres and are irregularly shaped.

This mapping unit is about 50 percent Urban land and 30 percent somewhat poorly drained Crosby soils. Crosby soils are identifiable in lawns, gardens, parks, and other open areas. They have a profile similar to the one described as representative of the series, but alteration is evident where small, low lying ridges have been cut or smoothed.

Included with this unit in mapping are small areas of well drained Miami soils, very poorly drained Brookston soils, and Cut and fill land.

Runoff is generally rapid on the Urban land and slow on the Crosby soils. Most areas are drained by sewer systems and gutters, and some are drained by surface ditches. Construction and engineering work should be based largely on the properties and qualities of the Crosby soils. Erosion is a problem if disturbed areas are left bare for a considerable period. Bare areas are subject to gullying, sheet erosion, and water erosion, all of which remove much of the surface soil and subsoil. Because of wetness and slow permeability, the Crosby soils have severe limitations for most nonfarm uses. If excess water is removed, they are well suited to lawns, vegetable and flower gardens, and water-tolerant shrubs and trees. Not assigned to a capability unit or woodland suitability subclass.

UfA—Urban land-Fox complex, 0 to 3 percent slopes. This is a dominantly nearly level mapping unit on smooth terrace flats. In a few areas it is gently sloping. Areas range from 5 to 1,700 acres and are irregularly shaped.

This mapping unit is about 50 percent Urban land and 35 percent well drained Fox soils. Fox soils are identifiable in lawns, gardens, parks, and other open areas. They have a profile similar to the one described as representative of the series, but alteration is evident where small low knolls and ridges have been cut and the soil has been used as fill in lower lying areas.

Included with this unit in mapping are small areas of well drained Ockley and Martinsville soils, very poorly drained Westland soils, somewhat poorly drained Sleeth soils, and Cut and fill land.

Runoff is generally rapid on the Urban land and slow on the Fox soils. Most areas are drained by sewer systems and gutters, and some are drained by surface ditches. Construction and engineering work should be based largely on the properties and qualities of the Fox soils. Erosion is a problem if disturbed areas where the slopes are 2 or 3 percent are left bare for a considerable period. Bare areas on slopes are subject to gullying, sheet erosion, and water erosion, all of which remove much of the surface soil and subsoil. The Fox soils have slight limitations for most nonfarm uses. If adequately watered, they are well suited to lawns, vegetable and flower gardens, and drought-tolerant shrubs and trees. Not assigned to a capability unit or woodland suitability subclass.

UfC—Urban land-Fox complex, 6 to 12 percent slopes. This moderately sloping mapping unit is on the short slopes between broad, level terraces or outwash plains and bottom land and on the short slope breaks on terraces or outwash plains. Areas range from 10 to 65 acres in size and are long.

This mapping unit is about 50 percent Urban land and 35 percent well drained Fox soils. Fox soils are identifiable in lawns, gardens, parks, and other open areas. They have a profile similar to the one described as representative of the series, but the surface layer is thinner, depth to the underlying gravelly sand and sand is 24 to 32 inches, and in places alteration is evident.

Included with this unit in mapping are small areas of gently sloping soils and strongly sloping, well drained soils. Also included are areas of Cut and fill land.

Runoff is generally very rapid on the Urban land and medium on the Fox soils. Most areas are drained by sewer systems and gutters, and some are drained by surface ditches. Construction and engineering work should be based largely on the properties and qualities of the Fox soils. Erosion is a problem if disturbed areas are left bare for a considerable period. Bare areas are subject to gullying, sheet erosion, and water erosion, all of which remove much of the surface soil and subsoil. Because of slope, the Fox soils have moderate limitations for most nonfarm uses. If adequately watered, they are well suited to lawns, vegetable and flower gardens, and drought tolerant shrubs and trees. Not assigned to a capability unit or woodland suitability subclass.

Ug—Urban land-Genesee complex. This nearly level mapping unit is on bottom land. Areas range from 40 to 1,300 acres. Most are irregularly shaped, but some are long. Slopes are 0 to 2 percent. Large areas are protected by levees.

This mapping unit is about 40 percent Urban land and 40 percent well drained Genesee soils. Genesee soils are identifiable in lawns, gardens, parks, and other open areas. They have a profile similar to the one described as representative of the series, but alteration is evident in many areas where topsoil has been stripped.

Included with this unit in mapping are small areas of very poorly drained Sloan soils, somewhat poorly drained Shoals soils, and moderately well drained Eel soils. Also included are areas of fill.

Runoff is generally rapid on the Urban land and slow on the Genesee soils. Most areas are drained by sewer systems and gutters, and some are drained by surface ditches. Construction and engineering work should be based largely on the properties and qualities of the Genesee soils. Erosion is not a problem. Because

(Joins sheet 20)

R. 2 E. | R. 3 E.

(Joins sheet 25)

(Joins sheet 27)

(Joins sheet 32)

T. 15 N.

820 000 FEET

830 000 FEET

335 000 FEET

INDIANAPOLIS

Eagle Creek

Little Eagle Creek

Dry Run

Mill Run

Ristow Branch

Lynn Creek

Mickley Run

water

C. F.

G.P.

1 Mile

5 000 Feet

Scale 1:15 840